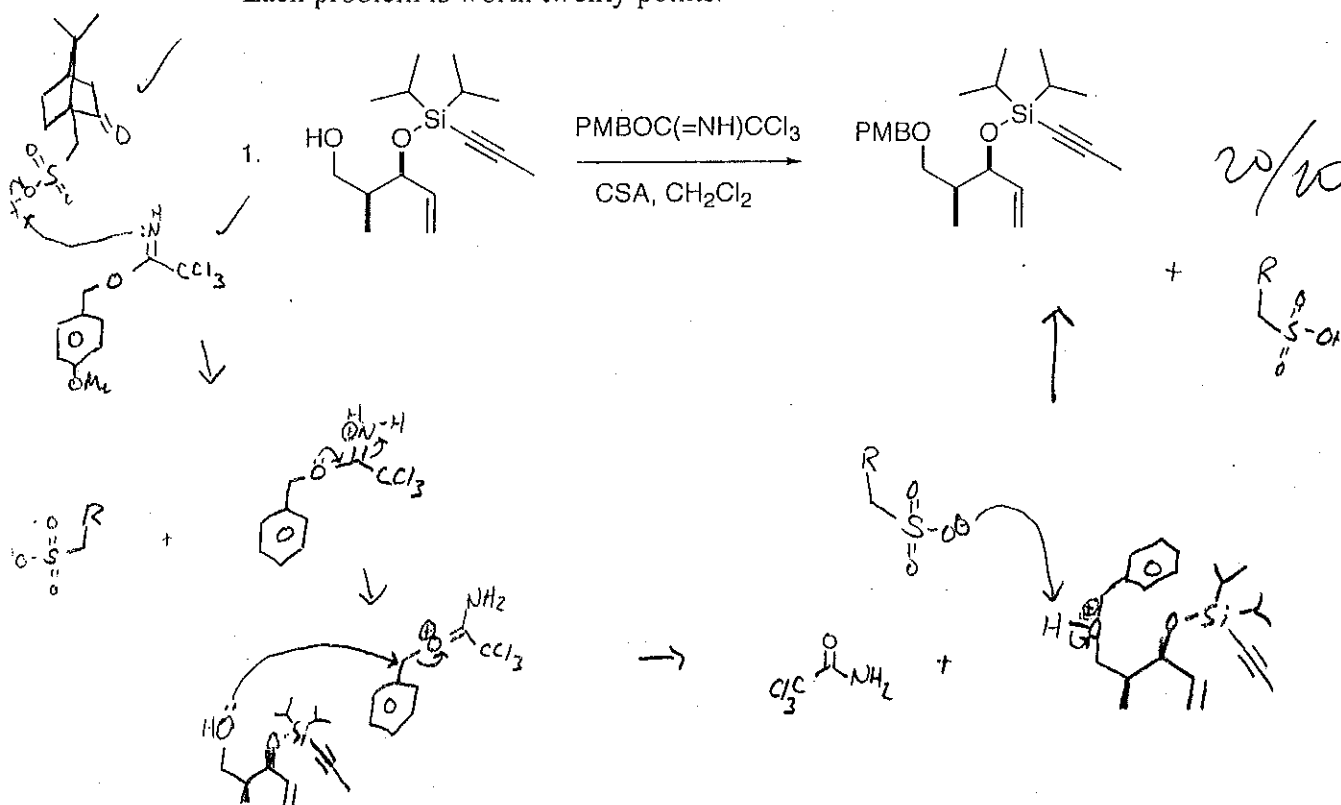


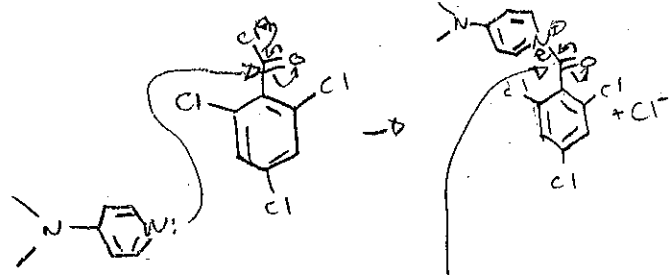
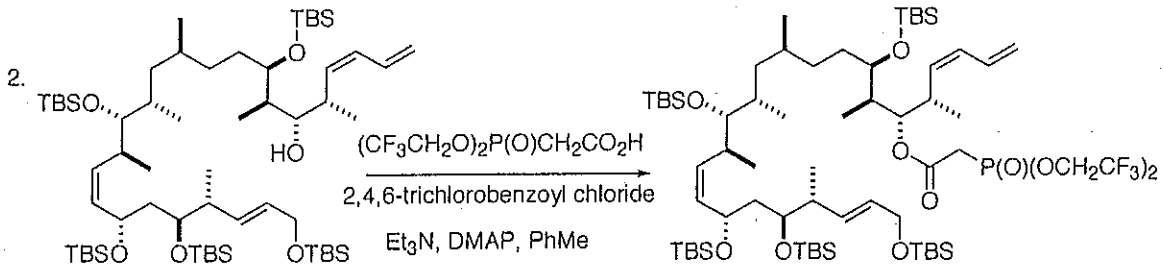
Chem 667-51  
April 25, 2006

### Exam #2

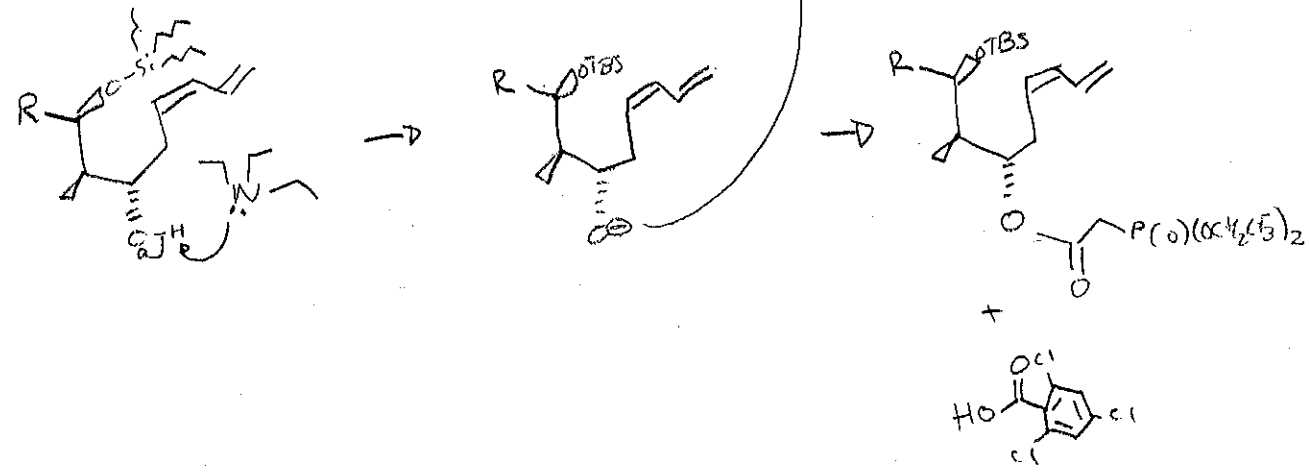
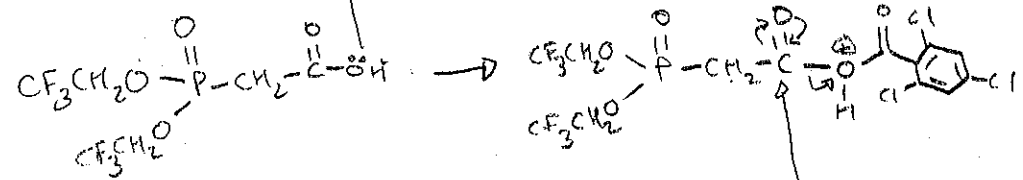
This is an open-book, open notes exam. You may take up to three hours. For each transformation shown, draw detailed arrow-pushing mechanisms for each step, including the explicit chemical structure of every reactant and reagent (show every heavy atom - H's not required), all stereochemistry, and all the organic products of each reaction. The abbreviations are exactly as they appear in the publication.

Each problem is worth twenty points.



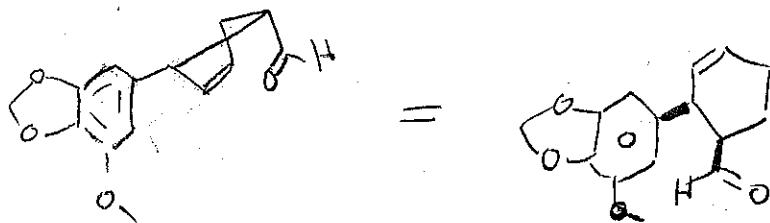
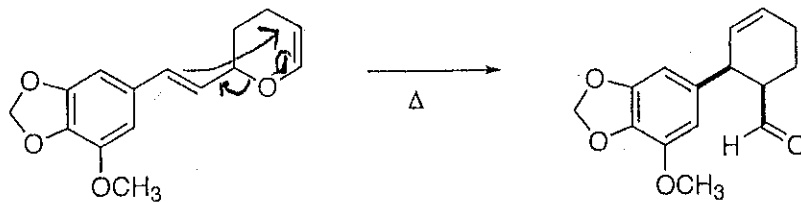


20/20



Claisen

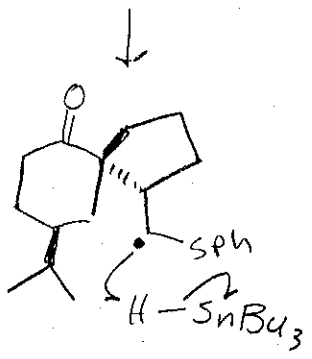
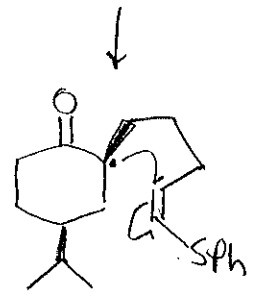
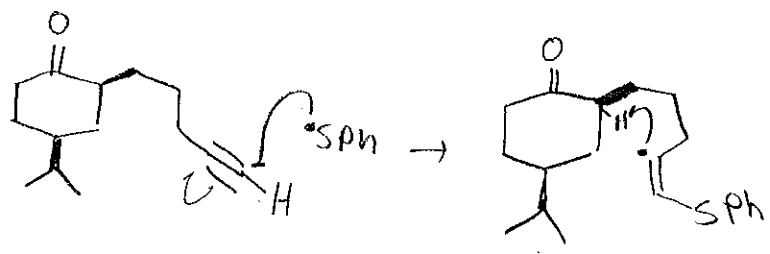
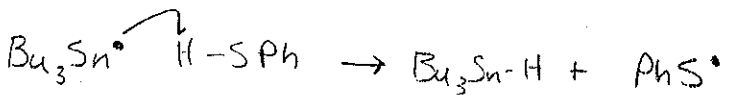
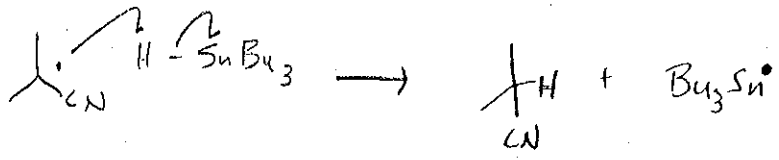
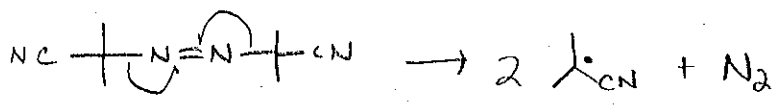
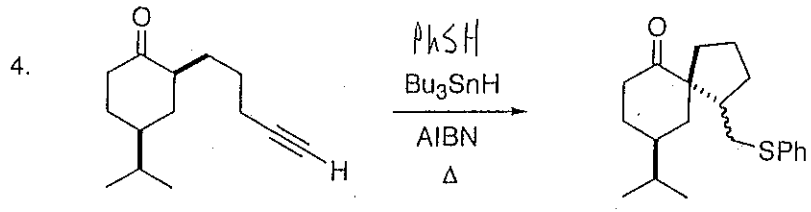
3.



product

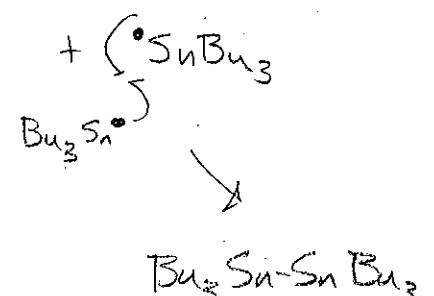
20/20 sum

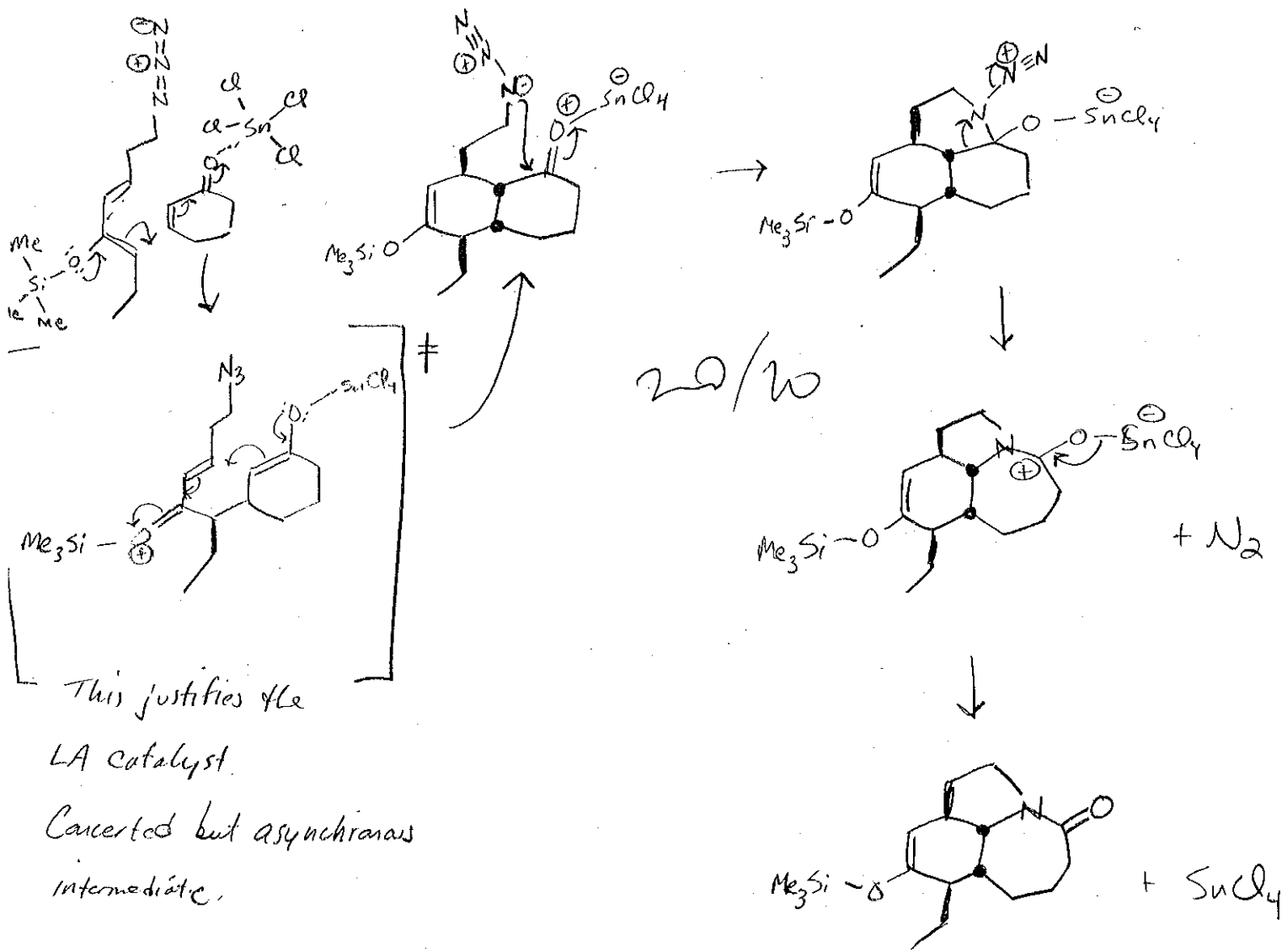
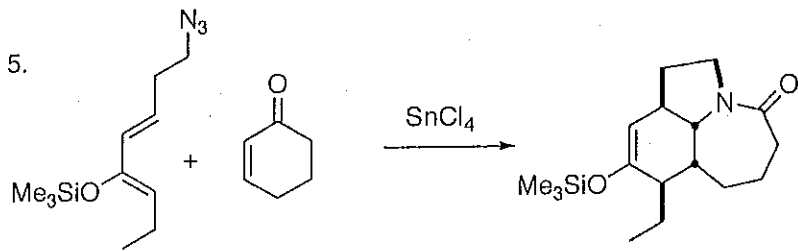
Practice Only



20/20  
5/5

Handwritten sketches of various chemical structures, including substituted cyclohexanes and alkenes, some with arrows indicating reaction pathways or radical sites.





This justifies the  
LA catalyst.  
Concerted but asynchronous  
intermediate.